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EXAMINER

DUONG, THOI V

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/045,871

Applicant(s)

FARIS ET AL.

Examiner

Thoi V Duong

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12,24-35 and 51 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12,24-35 and 51 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group IA, claims 1-12, 24-35 and 51, in Paper No. 6 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 5 and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not disclose the method for creating a micropolarizer comprising removing said first plate and removing said second plate. The specification only discloses that one substrate can be removed (page 12, lines 15-18).

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 27 recites the limitation "the materials" in line 2 of the claim. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-4, 6-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Onishi et al. (USPN 6,074,708).

As shown in Fig. 6, Onishi et al. discloses a method for creating a micropolarizer, comprising:

providing a first flat glass plate 61 having a first and a second surface;

providing a second flat glass plate 62 having a first and a second surface;

coating a polyimide 61a, 61b on each of said first surface of said two plates (col. 24, lines 39-44; col. 25, lines 35-41 and col. 26, lines 36-40);

rubbing said polyimide coated upon said first surface of said first plate along a predetermined direction (col. 24, lines 30-35);

rubbing said polyimide coated upon said first surface of said second plate along a direction having a predetermined angle in relation to said predetermined direction (col. 24, lines 30-35);

aligning said first plate and said second plate having said first surface of said first plate and said first surface of said second plate facing each other thereby creating a space there between (Fig. 6 and col. 24, lines 44-47); and

Art Unit: 2871

filling a liquid crystal between said space whereby a liquid crystal cell 60 (TN mode) is created (col. 24, lines 48-51),

wherein said liquid crystal comprises a type of polymerizable nematic liquid crystal (col. 24, lines 26-30 and 48-57);

wherein said space having a substantially equidistance between said first surface of said first plate and said first surface of said second plate (col. 19, line 64 through col. 20, lines 30-32); and

wherein said predetermined angle is about ninety degrees (col. 24, lines 44-47).

As shown in Fig. 2, the method of Onishi et al. further comprises a mask 20 having alternate transparent stripes (light-transmissive areas 20b) and opaque stripes (light-blocking areas 20a) covering said cell whereby a solidifying energy are being selectively applied there through; and partially solidifying some portions said liquid crystal (col. 24, lines 58-62).

Furthermore, the method of Onishi et al. comprises removing said mask and heating said cell or film to a temperature set point, whereby unsolidified liquid crystals covered by said opaque stripes are being transformed into a different phase (col. 20, line 66 through col. 21, line 4).

Finally, the method of Onishi et al. comprises re-solidifying uncured nematics into an isotropic phase (col. 20, line 66 through col. 21, line 4 and lines 35-43).

8. Claims 24, 25, 31, 32, 34 and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsieh (USPN 5,790,221).

Art Unit: 2871

As shown in Figs. 4A-4F and 5, Hsieh discloses a method for creating a micropolarizer, comprising:

providing a first flat glass plate 10 having a first and a second surface (col. 3, lines 34-37);

coating a polyimide 20 on said first surface of said first plate (Fig. 4A and col. 3, lines 34-37);

rubbing said polyimide coated upon said first surface of said first plate along a predetermined direction 70 (Fig. 4B);

coating a photo resist 40 on top of said polyimide (Fig. 4C);

patterning said photo resist into a predetermined alternatively spaced strips (Fig. 4D and col. 3, lines 41-43);

re-rubbing said polyimide coated upon said first surface of said first plate along a direction 80 having a predetermined angle in relation to said predetermined direction (Figs. 4E and 5; and col. 3, lines 5-10); and

rinsing off said photo resist (Fig. 4F and col. 3, lines 47-50).

As shown in Fig. 6, the method of Hsieh further comprises:

providing a second flat glass plate 90 having a first and a second surface (col. 3, lines 52-57);

aligning said first plate and said second plate having said first surface of said first plate and said first surface of said second plate facing each other thereby creating a space there between (col. 3, lines 58-60), wherein said space having a substantially

Art Unit: 2871

equidistance between said first surface of said first plate and said first surface of said second plate (col. 4, lines 18-19); and

filling a liquid crystal between said space whereby a cell is created, wherein said liquid crystal comprising a nematic liquid crystal (col. 4, lines 13-17).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 11 and 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al. (USPN 6,074,708) as applied to claims 1-4, 6-10 and 12 above in view of Kitayama et al. (USPN 4,778,259).

With respect to claim 11, Onishi et al. discloses a method for creating a micropolarizer that is basically the same as that recited in claim 11 except for a predetermined angle of about forty-five degrees. As shown in Figs. 1 and 4, Kitayama et al. discloses a liquid crystal device comprising orientation controlling films 105 and 105a formed on substrates 101 (lower) and 101a (upper) respectively (col. 6, lines 33-45), wherein a predetermined angle between orientation axes 11 and 12 of the substrates is set to a range of 30-50 degrees (Fig. 1 and col. 4, lines 29-32) so as to realize an excellent bistability state for the display (col. 3, lines 20-24). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Onishi et al. with the teaching of Kitayama et al. by forming a

Art Unit: 2871

predetermined angle of about forty-five degrees between orientation axes of the substrates so as to attain an improved contrast for the display.

With respect to claim 51, it is obvious that a liquid crystal device comprises an input surface for receiving incident light and an output surface for emanating a processed light as shown in Fig. 4 of Kitayama et al., where a cell structure 100 is sandwiched between a pair of polarizers 107 and 108 to form an optical modulation device.

11. Claims 26 and 28-30 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (USPN 5,790,221) as applied to claims 24, 25, 31, 32, 34 and 35 in view of Onishi et al. (USPN 6,074,708).

Hsieh discloses a method for creating a micropolarizer that is basically the same as that recited in claims 26 and 28-35 except for solidifying a liquid crystal. As shown in Figs. 2 and 6, Onishi et al. discloses a method for creating a micropolarizer, comprising:

employing a liquid crystal comprising a type of polymerizable nematic liquid crystal (col. 24, lines 26-30 and 48-57);

solidifying said liquid crystal by applying an ultraviolet light (col. 20, lines 49-65 and col. 24, lines 58-62),

wherein said predetermined angle is about ninety degrees (col. 24, lines 44-47).

The method of Onishi et al. further comprises re-solidifying uncured nematics into an isotropic phase by applying an ultraviolet light (col. 20, line 66 through col. 21, line 4 and lines 35-43).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Hsieh with the teaching of Onishi et al. by solidifying the liquid crystal to create liquid crystal domain surrounded by polymer walls.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al. (USPN 6,074,708) as applied to claims 1-4, 6-10 and 12 above in view of WO 97/16762 (WO'762).

Onishi et al. discloses a method for creating a micropolarizer that is basically the same as that recited in claim 5 except for removing one of the plates. As shown in Example 6, WO'762 describes a method for fabricating a super broad-band CLC polarizer between plastic substrates comprising removing one of the plastic substrates so that one surface is free of substrate so as to obtain a thin display (see page 22, line 26 through page 23, line 28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Onishi et al. with the teaching of WO'762 by removing one of substrates to obtain a thin display.

13. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hsieh (USPN 5,790,221) as applied to claims 24, 25, 31, 32, 34 and 35 above in view of WO 97/16762 (WO'762).

Hsieh discloses a method for creating a micropolarizer that is basically the same as that recited in claim 27 except for removing one of the plates. As shown in Example 6, WO'762 describes a method for fabricating a super broad-band CLC polarizer between plastic substrates comprising removing one of the plastic substrates so that

Art Unit: 2871

one surface is free of substrate so as to obtain a thin display (see page 22, line 26 through page 23, line 28). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Onishi et al. with the teaching of WO'762 by removing one of substrates to obtain a thin display.


Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (703) 308-3171. The examiner can normally be reached on Monday-Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (703) 305-3492.

Thoi Duong

08/15/2003


T. Chowdhury
Primary Examiner